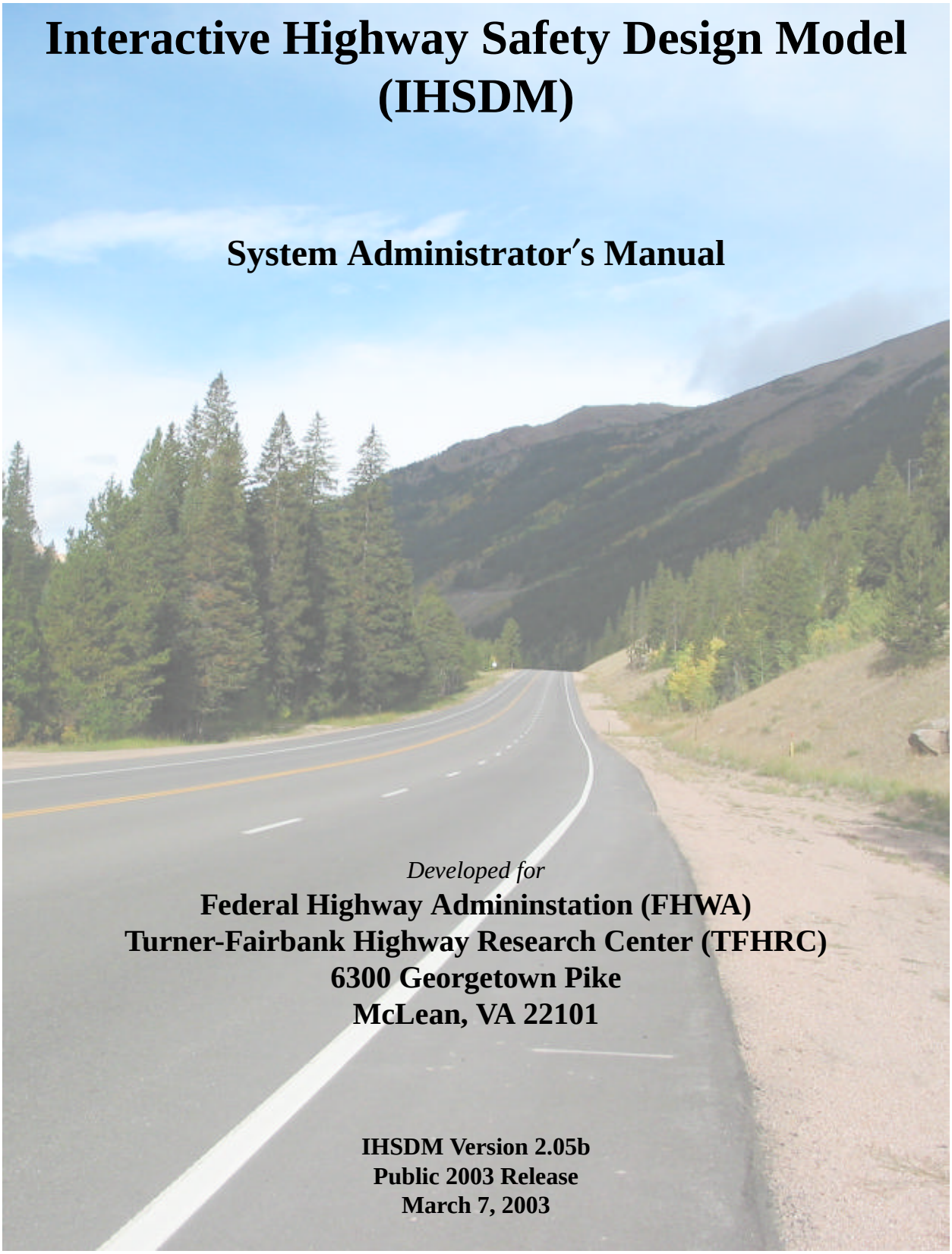
# Interactive Highway Safety Design Model (IHSDM)

## System Administrator′s Manual



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# 1. Introduction

This manual documents the tools and procedures used to maintain and tailor the IHSDM system for an end-user organization.

# 2. Customization

## 2.1 Customizing Report Templates

The basic layout of many of the reports generated by IHSDM are determined by report templates. This section discusses how to modify existing templates and how to create new alternative templates. The section discusses the basic report formats, template variables, report template files, templates selection and concludes with an example.

### 2.1.1 Report Formats

IHSDM supports three report document formats. These document formats allow a broad range of word processors, browsers and editors to be used in conjunction with IHSDM.

- **Text** An ASCII text document.
- **Rich Text Format (RTF)** A RTF document as supported by Microsoft Word and Corel WordPerfect.
- **Hyper Text Markup Language (HTML)** A HTML document as supported by Microsoft Word, Corel WordPerfect, Microsoft Internet Explorer and Netscape Navigator.

### 2.1.2 Template Variables

When a template file is used to generate a report, a number of symbolic names embedded in the template file are expanded. Symbolic name expansion is not supported due to problems with the binary file format used by Microsoft Word (i.e., `*.doc`) and Corel Wordperfect (i.e., `*.wpd`). Currently, only ASCII template files are supported.

**Table 1. Template File Symbolic Names**

| Variable Name | Description |
|---|---|
| **%analysisComment%** | The current IHSDM analysis comment |
| **%analysisName%** | The current IHSDM analysis name |
| **%date%** | The current date (The format is **`Month Day, Year`**) |
| **%date_time%** | The current date and time (The format is "**`Month Day, Year Hour:Minute:Second AM/PM`**") |
| **%ihsdmVersion%** | The current IHSDM release number |
| **%ihsdmModule%** | The current IHSDM module name |
| **%ihsdmModuleRelease%** | The current IHSDM module release number |
| **%projectComment%** | The current IHSDM project comment |
| **%projectName%** | The current IHSDM project name |
| **%reportBody%** | The current PRM analysis report or summary report body |
| **%roadwayID%** | The current highway full identifier |
| **%roadwayName%** | The current highway name |
| **%sysgenDateTime%** | The date and time the IHSDM system was packaged |
| **%time%** | The current time (The format is "**`Hour:Minute:Second AM/PM`**") |
| **%userID%** | The current user identifier |
| **%userEmail%** | The user's full name as specified by the **`ihsdm.user.email`** property |
| **%userName%** | The user's full name as specified by the **`ihsdm.user.fullname`** property |
| **%userNumber%** | The user's telephone number as specified by the **`ihsdm.user.telno`** property |
| **%userOrg%** | The user's organization name as specified by the **`ihsdm.user.organization`** property |
| **%userTitle%** | The user's title as specified by the **`ihsdm.user.title`** property |
| **%stackTrace%** | The current stack trace file (This file is the log of stack trace dumps for the current program invocation. It is useful for problem diagnosis and correction. This is used in the problem report templates.) |

### 2.1.3 Report Templates

The report templates reside in the **`templates`** subdirectory of the IHSDM system directory (referred to as **`[ihsdm.home]`**). The name of the template file is used to specify the extension of the output file generated by the report generation mechanism. The basic template file name is **`NAME_EXT.template`**. The **`NAME`** part of the file name specifies the use for the template file, i.e., **`pr`** for problem report templates, **`report`** for analysis report templates, and **`summary`** for PRM summary report templates. The **`EXT`** part of the file name specifies the extension used for the output generated from the template. The **`.template`** extension is used by convention to specify a template file.

- **Policy Review Module Analysis Report**
  The PRM analysis report template is currently supported for text

(**[ihsdm.home]/templates/report_txt.template**), RTF
(**[ihsdm.home]/templates/report_rtf.template**) and HTML
(**[ihsdm.home]/templates/report_htm.template**) formats.

- **Policy Review Module Summary Report**
  The PRM summary report template is currently supported for the HTML
  (**[ihsdm.home]/templates/summary_htm.template**) format.
- **Problem Report/Change Request (PR/CR)**
  The IHSDM problem report/change request template is currently supported for text
  (**[ihsdm.home]/templates/pr_txt.template**), RTF
  (**[ihsdm.home]/templates/pr_rtf.template**) and HTML
  (**[ihsdm.home]/templates/pr_htm.template**) formats.

### 2.1.4 Selecting a Template

The Problem Report and PRM Analysis Report templates are specified on the *Reports* tab of the user properties dialog.

### 2.1.5 An Example

Figure 1., *Example PR/CR Template File* is a sample problem report/change request template file for an ASCII editor. This is an example of the file **[ihsdm.home]/template/pr_text.template**.

```
======================================================================
IHSDM Problem Report/Change Request
IHSDM Release:    %ihsdmVersion%
E-mail problem reports to pr.ihsdm@rome.ittssc.com
PR/CR No.   %prNumber%
Tester:           %userName% (%userID%)
Title:            %userTitle%
Organization:   %userOrg%
E-Mail:           %userEmail%
Tel.:       %userNumber%
Date:       %date_time%
Module/Function (and Version) Tested:
      IHSDM(%ihsdmVersion%) %ihsdmModule% (%ihsdmModuleRelease%)/
Data Input File: %roadwayID%
Project:     %projectName%
Analysis:    %analysisName%
Type of Issue:
      Problem
      Change Request
      Enhancement
Category:
      Critical
      Severe
      Annoyance
      Cosmetic
Description (or Steps to Problem):
Other Information:
ITT Programmer:
Receiving Date:
Closing Date:
Final Resolution:
Staff Hours:
--------------------
Stack Trace
--------------------
%stackTrace%
```

**Figure 1. Example PR/CR Template File**

## 2.2 Customizing Help

The basic information included in all IHSDM-based help can be modified and enhanced by the system maintainer and/or developer. In addition, new help sources may be added to the graphical user interface (GUI) and the PRM analysis reports. This section discusses three different help customization techniques. In this section, the notation **`[ihsdm.home]`** is used to reference the system home directory.

### 2.2.1 Data Dictionary Based Help

The basic definition of a pane, or item specification with a data dictionary may include several attributes that provide descriptive information to the user. This information is provided by the GUI in the form of tool-tips and context sensitive help. These pane or item attributes are described more completely in the IHSDM Pane Overview and the IHSDM Item Overview.

To effect a change in the data dictionary-based help, the following steps are employed:

1. Make the changes to the item attributes in the appropriate ASCII data dictionary file (for example, the `[ihsdm.home]/datadict/prm.dd`).
2. Rebuild the system data dictionary (i.e., the `[ihsdm.home]/system.blob`) using the makedict.
3. Rebuild the help system using the genpdf.
4. Test the changes.

### 2.2.2 Master HTML-Based Help

HTML-based help may be referenced within the definition of pane elements with a data dictionary. These references may be associated with a button widget action or a menu item.

#### 2.2.2.1 Master HTML Lookup

The master HTML-based help is implemented using the `ihsdm.master.HTMLHelp` class which in turn uses the `ihsdm.resources.HTMLLookUp` class. Specifically, the **`displayHTML`** method from this class is referenced as the target of a widget or menu item `action` pane attribute. The `action` specification includes a reference to a specific program key. The set of possible program keys are defined and mapped to a specific HTML reference in data contained in the server blob (i.e., `[ihsdm.home]/server.blob`). The data in the server blob is created from the ASCII file `[ihsdm.home]/datadict/masterhelp.txt`.

The master HTML-based help mechanism is very similar to the PRM Report Help discussed in a later section.

#### 2.2.2.2 HTML Lookup Blob

The master HTML-based help reference lookup is implemented in the `ihsdm.resources.HTMLLookUp` class. This class references the `MasterHelp` data item defined in the `master` data dictionary. The `MasterHelp` data item includes a child item named `HTMLLookUp`. The `HTMLLookUp` data item consists of the following elements:

- `hrefProgramKey` - the text key that is referenced from menu item or widget `action` specifications.
- `hrefDirectory` - a full path directory name or the subdirectory of the system home directory that contains the HTML file. The value of this data item may also be a URL. If the value of this data item is `null`, system home directory is used as the base directory. Any IHSDM property may be referenced by delimiting the property name with the percent sign (%) character. Thus a directory reference of `%ihsdm.home%/html` specifies the subdirectory `html` of the system home directory.
- `hrefReference` - the name of the HTML file (and optional fragment) for the help reference.
- `hrefTitle` - a textual title associated hypertext link.
- `hrefComment` - an optional reference comment.

For example, the following data lines in the file [ihsdm.home]/datadict/masterhelp.txt define three master help program keys and their associated HTML references:

```
@@@module:master
@@name:server,server
@@units:Metric
// MasterHelp: Master HTML Help Table
//  tableName: Table Name
```

```
@MasterHelp:1,tableName
1,"Master HTML Help Lookup Tables"
   ...
@MasterHelp.HTMLLookUp:2,hrefProgramKey,hrefDirectory,hrefReference,hrefTitle,hrefCommen
   ...
2,install_man,%ihsdm.home%/html/user,install.html,"Installation Manual","install help"
2,ihsdm_um,html/user,ihsdm_user.html,"IHSDM User's Manual","install help"
2,ihsdm_web,http://www.tfhrc.gov/safety/ihsdm,ihsdm.htm,"IHSDM Web Page at TFHRC","IHSDM
```

#### 2.2.2.3 Pane Attributes

The following is an example of a button widget reference to the **`displayHTML`** method. In the example, a reference is made to the help associated with the program key `master_help` in the master help data in the server blob.

```
widget btHelp {
  title: "Help"
  description: "Help for IHSDM master program"
  widgettype: JButton
  action: "classtag ihsdm.master.HTMLHelp displayHTML master_help"
}
```

The following is an example of a menu item based reference to the **`displayHTML`** method. In the example, a reference is made to the help associated with the program key `ihsdm_um` in the master help data in the server blob.

```
menu mHelp1 {
  title: "IHSDM User's Manual"
  action: "classtag ihsdm.master.HTMLHelp displayHTML ihsdm_um"
}
```

### 2.2.3 PRM Report Help

The Policy Review Module has been designed to allow additional site-specific help to be added to the Analysis Report. This help mechanism is similar to the Master HTML-Based Help mechanism discussed previously. The PRM report mechanism can be used to reference HTML-based tutorial or policy documentation in a PRM Analysis Report output. The mechanism allows the reference to be specific to an IHSDM policy file and PRM policy check. The information about the report references are contained in a special configuration blob, referred to as the *HTML Lookup Blob*. The PRM report help reference lookup is implemented in the `ihsdm.prm.output.CDKeys` class which in turn is supported by the `ihsdm.resources.HTMLLookUp` class.

#### 2.2.3.1 Policy File Reference

With each ASCII policy file, a reference is made to the name of the HTML Lookup Blob which contains the associated help references. For example, in the `AASHTO.txt` policy file, the following lines reference a configuration blob named `aashtolut`:

```
@ConfigName:0,lookupConfigName
0,aashtolut
```

These lines specify that the HTML lookup table for this policy will be defined in the file `[ihsdm.home]/config.aashtolut.blob`. The contents of this configuration blob is defined in the ASCII file [ihsdm.home]/policy/aashto94_lookup.txt. This configuration blob is created as part of the loadpolicy.

#### 2.2.3.2 HTML Lookup Blob

The HTML Lookup Blob contains data for the `PolicyLookup` data item. The `PolicyLookup` data item has a child item named `tableName` that specifies the name of the lookup table. The actual references to the HTML-based files is in the data specified for the `HTMLLookUp` data item. The `HTMLLookUp` data item consists of the following elements:

- `hrefProgramKey` - the text key used within the individual policy check to perform the lookup. The actual table lookup is done using a base program key modified in a standard way. The primary help reference key is `BASE_p`, where `BASE` is one of the base program keys defined in Table 2., *PRM Base Program Keys*. Secondary keys are of the form `BASE_p_1`, `BASE_p_2`, etc.
- `hrefDirectory` - the subdirectory of the system home directory that contains the HTML file. If the value of this data item is `null`, the value of the **`ihsdm.greenbook.html.path`** system property is used for the directory. If this property is not defined, the system home directory is used.
- `hrefReference` - the name of the HTML file (and optional fragment) for the help reference.
- `hrefTitle` - the textual title that appears in the output report with the associated hypertext link.
- `hrefComment` - an optional reference comment.

For example, the following data lines in the file [ihsdm.home]/policy/aashto94_lookup.txt. define three help references for the Traveled Way Width policy check:

```
@@@module:prm
@@name:policy,AASHTO 1994
@@units:Metric
   ...
@PolicyLookup.HTMLLookUp:2,hrefProgramKey,hrefDirectory,hrefReference,hrefTitle,hrefComm
   ...
2,Travel_Way_Width_p,html/prm,TraveledWayWidth.html,"Travel Way Width Help","sample entr
2,Travel_Way_Width_p_1,html/prm,implementation.html#tww,"Implementation","example"
2,Travel_Way_Width_p_2,null,Docs/05_2.htm#H,"AASHTO 1994, Width of Traveled Way (Local R
```

#### 2.2.3.3 Program Keys

Table 2., *PRM Base Program Keys* shows the basic program keys as defined for the various PRM policy checks.

**Table 2. PRM Base Program Keys**

| Base Key Name | Description |
|---|---|
| Auxiliary_Lane_Width | Auxiliary Lane Width Help |
| Bridge_Width | Bridge Width Help |
| Clear_Zone_and_Roadside_Slope | Clear Zone and Roadside Slope Help |
| Compound_Curve | Compound Curve Help |
| Critical_Length_of_Grade | Critical Length of Grade Help |
| Cross_Slope_Roll_Over | Cross Slope Roll Over Help |
| Curve_Length | Curve Length Help |
| Decision_Sight_Distance | Decision Sight Distance Help |
| Intersection_Sight_Distance | Intersection Sight Distance Help |
| Normal_Cross_Slope | Normal Cross Slope Help |
| Normal_Ditch_Design | Normal Ditch Design Help |
| Normal_Shoulder_Slope | Normal Shoulder Slope Help |
| Passing_Sight_Distance | Passing Sight Distance Help |
| Radius_of_Curve | Radius of Curve Help |
| Superelevation_Transition | Superelevation Transition Help |
| Shoulder_Type | Shoulder Type Help |
| Shoulder_Width | Shoulder Width Help |
| Stopping_Sight_Distance | Stopping Sight Distance Help |
| Superelevation | Superelevation Help |
| Tangent_Grade | Tangent Grade Help |
| Travel_Way_Width | Traveled Way Width Help |
| Vertical_Curve | Vertical Curve Help |

The following steps are taken to create or modify the PRM analysis report help references:

1. Create or modify the ASCII file used to create the HTML Lookup Blob. For example, the file [ihsdm.home]/policy/aashto94_lookup.txt. is used to create the standard HTML lookup blob associated with the standard AASHTO policy file `[ihsdm.home]/policy/AASHTO.txt`.
2. Make sure the `lookupConfigName` data item is defined in the policy file to reference the correct HTML Lookup blob.
3. Build (rebuild) the policy blob, for example using the loadpolicy.
4. Build (rebuild) the HTML lookup blob using the loadpolicy.
5. Run the PRM and test the references.

## 2.3 Customizing Policies

The policy values and tables used by the PRM, IDRM and CPM may be customized using a dialog box accessed from the Admininstration Tool. This dialog box is discussed in Maintaining IHSDM Policies.

# 3. Administration Tool

A GUI-based tool is included with IHSDM to perform the procedures that are implemented with command scripts. This section documents version 1.00h of the Administration Tool.

## 3.1 Launching the Administration Tool

IHSDM can be launched by any of the following methods:

- From the START menu, select Run, and then type `{IHSDM_HOME}\admintool.exe` (where `{IHSDM_HOME}` is the IHSDM home directory). Click the OK button and the IHSDM Administration tool dialog box appears.
- In Windows Explorer, double-click on the `admintool.exe` file and the IHSDM program appears.

## 3.2 Using the Administration Tool

This dialog is a graphical user interface for the system administration functions associated with the Public Test release of IHSDM. The **`IHSDM System Administration Tool`** frame includes the following menu items: File, Edit, View and Help. The **`IHSDM System Administration Tool`** frame includes the following toolbar buttons: Help and Exit. The **`IHSDM System Administration Tool`** frame includes the following tabs: General Functions, Policy, PRM, CPM, DCM, IRM and TAM. The **`IHSDM System Administration Tool`** frame includes the following statusbar fields: Progress Bar and Progress Bar Text.

### 3.2.1 Menu Items

The IHSDM System Administration Tool Frame includes the following menu items:

- **File** - This menu includes menu items to process files and exit the administration tool The **`File`** menu includes the following menu items: General Functions, Policy Functions, PRM Functions, CPM Functions, DCM Functions, IRM Functions, TAM Functions and Exit.
  - **General Functions** - This menu includes general administrative functions. The **`General Functions`** menu includes the following menu items: Rebuild Data Dictionaries, Rebuild Master Help and Specify Client Upgrades.
    - **Rebuild Data Dictionaries** - This menu item rebuilds all IHSDM data dictionaries from the text files (*.dd). This action is similar to the **makedict** command script. The ASCII files named c:\f2\ihsdm_home\datadict*.dd are converted to binary files, named c:\f2\ihsdm_home\datadict*.dict.
    - **Rebuild Master Help** - This menu item rebuilds the master help lookup tables from text files.
    - **Specify Client Upgrades** - This menu item starts a dialog to specify the system component to be upgraded on client machines.
  - **Policy Functions** - This menu includes policy related functions. The **`Policy Functions`** menu includes the following menu items: Rebuild Policy Files and Edit Policy File.
    - **Rebuild Policy Files** - This menu item rebuilds all policy files and associated help from the text files. This action is the same as the **loadpolicy** command script. The XML files, named `c:\f2\ihsdm_home\policy.*.blob.xml` are deleted. The ASCII files, named `c:\f2\ihsdm_home\policy\*lookup.txt` are converted to XML files (e.g. named `c:\f2\ihsdm_home\prm.*.policy.xml`.

    - **Edit Policy File** - This menu item edits a selected policy file.
  - **PRM Functions** - This menu includes PRM related functions. The **PRM Functions** menu includes the following menu items: Edit Analysis Report Graph Properties.
    - **Edit Analysis Report Graph Properties** - This menu item displays a dialog to edit the analysis report graph properties. The properties apply to all users of the system.
  - **CPM Functions** - This menu includes CPM related functions. The **CPM Functions** menu includes the following menu items: Display/Edit Factors and Edit Analysis Report Graph Properties.
    - **Display/Edit Factors** - This button displays the calibration/distribution factors for editing.
    - **Edit Analysis Report Graph Properties** - This button displays a dialog to edit the CPM analysis report graph properties. The properties apply to all users of the system.
  - **DCM Functions** - This menu includes DCM related functions. The **DCM Functions** menu includes the following menu items: Edit Analysis Report Graph Properties.
    - **Edit Analysis Report Graph Properties** - This menu item displays a dialog to edit the DCM analysis report graph properties. The properties apply to all users of the system.
  - **IRM Functions** - This menu includes IRM related functions. The **IRM Functions** menu includes the following menu items: Rebuild IRM Configuration.
    - **Rebuild IRM Configuration** - This button rebuilds the IRM configuration file from text files.
  - **TAM Functions** - This menu includes TAM related functions. The **TAM Functions** menu includes the following menu items: Display/Edit Configuration and Edit Analysis Report Graph Properties.
    - **Display/Edit Configuration** - This button displays the TAM configuration data for editing.
    - **Edit Analysis Report Graph Properties** - This button displays a dialog to edit the TAM analysis report graph properties. The properties apply to all users of the system.
  - **Exit** - This button exits the IHSDM System Administration Utility.
- **Edit** - This menu includes menu items to edit user properties and to complete an IHSDM program report. The **Edit** menu includes the following menu items: Edit User Properties and Problem Report/Change Request.
  - **Edit User Properties** - This menu item brings up a dialog to edit the IHSDM user properties.
  - **Problem Report/Change Request** - This menu contains menu items to create a new PR/CR or edit an existing PR/CR. The **Problem Report/Change Request** menu includes the following menu items: Create New PR/CR, Edit Existing PR/CR and List Exiting PR/CR .

- **Create New PR/CR** - This menu item brings up a dialog to complete a new IHSDM problem report/change request.
- **Edit Existing PR/CR** - This menu item brings up a file chooser dialog to select a file. If selected, the file will be read as an IHSDM problem report/change request and displayed.
- **List Exiting PR/CR** - This menu item brings up browser with a listing of the current PR/CR issues at the development website.

- **View** - This menu includes menu items to display and clear the analysis log. The **`View`** menu includes the following menu items: View Analysis Log and Clear Analysis Log.
  - **View Analysis Log** - This menu item launches the user's specified text editor with the current analysis log.
  - **Clear Analysis Log** - This menu item clears (erases) the current analysis log.
- **Help** - The **`Help`** menu includes the following menu items: IHSDM User's Manual, User Documentation Summary, Master Index, System Administrator's Manual and About AdminTool.
  - **IHSDM User's Manual** - This menu item launches the HTML browser to display the IHSDM User's Manual.
  - **User Documentation Summary** - This menu item launches the HTML browser to display the **User Documentation Summary**. The summary contain links to all the user documentation.
  - **Master Index** - This menu item launches the HTML browser to display the **IHSDM Documentation Master Index**.
  - **System Administrator's Manual** - This menu item launches the HTML browser to display the System Administrator's Manual.
  - **About AdminTool** - This menu item displays the Administration Tool about box.

### 3.2.2 Toolbar

The IHSDM System Administration Tool Frame includes the toolbar buttons listed below.

**Help** - This button launches the HTML browser to display the System Administrator's Manual.

**Exit** - This button exits the IHSDM System Administration Utility.

### 3.2.3 Tabs

The IHSDM System Administration Tool Frame includes the tabs described in the following sections.

#### 3.2.3.1 General Functions Tab

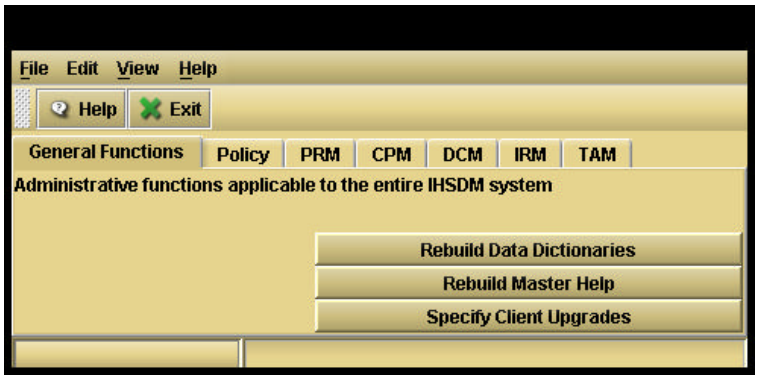


**Figure 2 General Functions Tab**

The **`General Functions`** tab includes the following widgets: Rebuild Data Dictionaries, Rebuild Master Help and Specify Client Upgrades.

- **Rebuild Data Dictionaries** - Widget type: button. This button rebuilds all IHSDM data dictionaries from the text files (*.dd). This action is similar to the **makedict** command script. The ASCII files, named c:\f2\ihsdm_home\datadict*.dd are converted to binary files named c:\f2\ihsdm_home\datadict*.dict.
- **Rebuild Master Help** - Widget type: button. This button rebuilds the master help lookup tables from text files.
- **Specify Client Upgrades** - Widget type: button. This button starts a dialog to specify the system component to be upgraded on client machines.

#### 3.2.3.2 Policy Tab

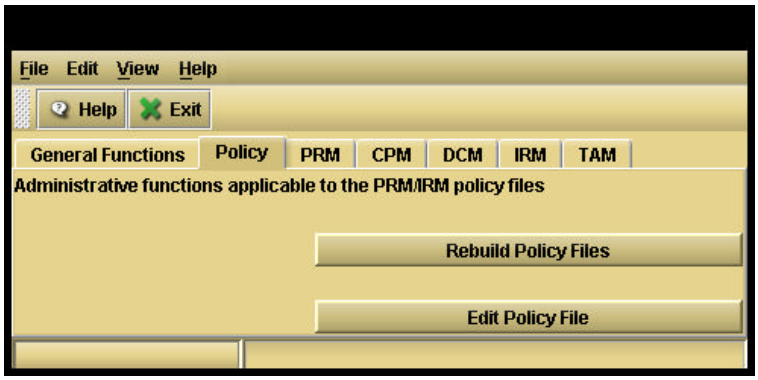


**Figure 3 Policy Tab**

The **`Policy`** tab includes the following widgets: Rebuild Policy Files and Edit Policy File.

- **Rebuild Policy Files** - Widget type: button. This button rebuilds all policy files and associated help from the text files. This action is the same as the **loadpolicy** command script. The XML files, named `c:\f2\ihsdm_home\policy.*.blob.xml` are deleted. The ASCII files, named `c:\f2\ihsdm_home\policy\*lookup.txt` are converted to XML files (e.g. named `c:\f2\ihsdm_home\prm.*.policy.xml`.
- **Edit Policy File** - Widget type: button. This menu item edits a selected policy file.

### 3.2.3.3 PRM Tab

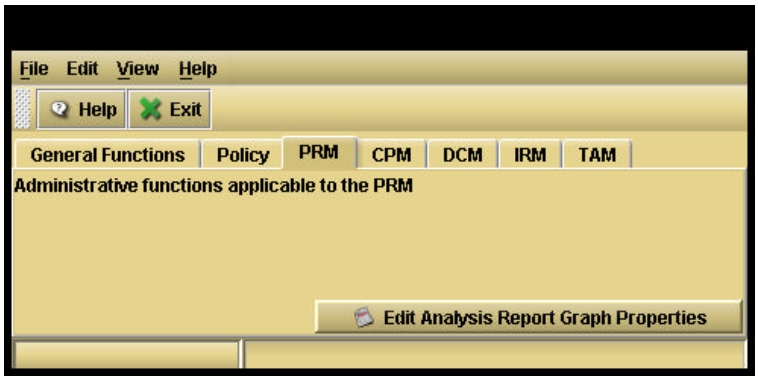


**Figure 4 PRM Tab**

The **PRM** tab includes the following widgets: Edit Analysis Report Graph Properties.

- **Edit Analysis Report Graph Properties** - Widget type: button. This button displays a dialog to edit the analysis report graph properties. The properties apply to all users of the system.

### 3.2.3.4 CPM Tab

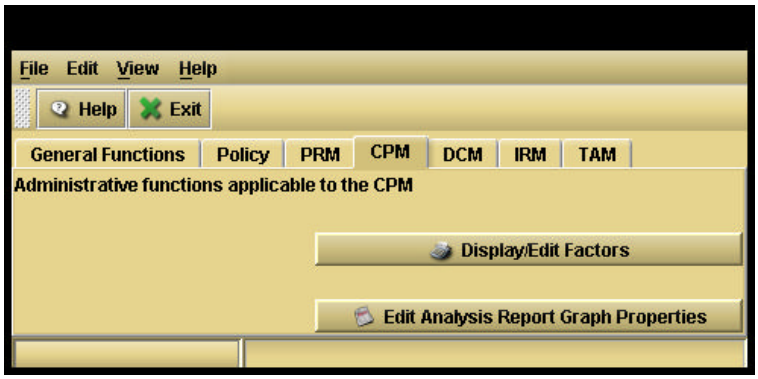


**Figure 5 CPM Tab**

The **CPM** tab includes the following widgets: Display/Edit Factors and Edit Analysis Report Graph Properties.

- **Display/Edit Factors** - Widget type: button. This button displays the calibration/distribution factors for editing.
- **Edit Analysis Report Graph Properties** - Widget type: button. This button displays a dialog to edit the CPM analysis report graph properties. The properties apply to all users of the system.

### 3.2.3.5 DCM Tab

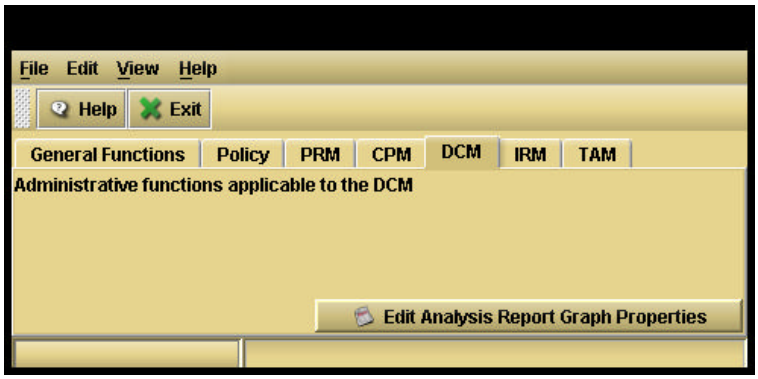


**Figure 6 DCM Tab**

The **DCM** tab includes the following widgets: Edit Analysis Report Graph Properties.

- **Edit Analysis Report Graph Properties** - Widget type: button. This button displays a dialog to edit the DCM analysis report graph properties. The properties apply to all users of the system.

#### 3.2.3.6 IRM Tab

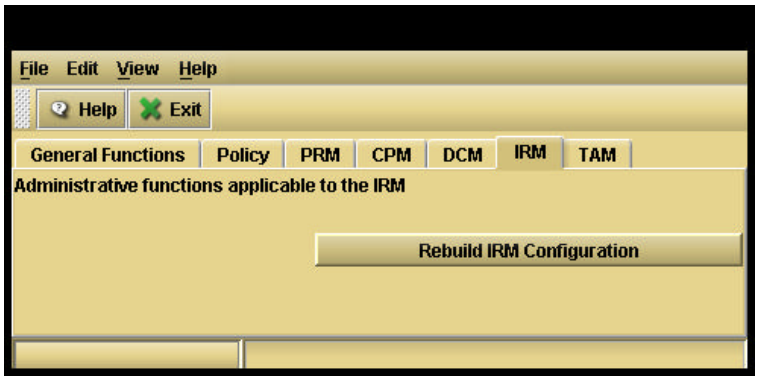


**Figure 7 IRM Tab**

The **IRM** tab includes the following widgets: Rebuild IRM Configuration.

- **Rebuild IRM Configuration** - Widget type: button. This button rebuilds the IRM configuration file from text files.

#### 3.2.3.7 TAM Tab

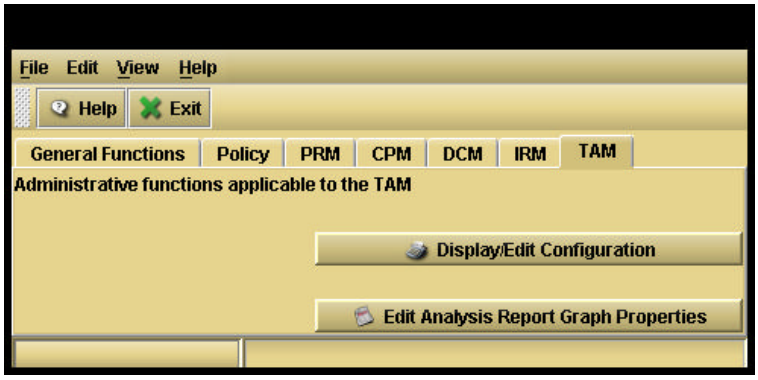


**Figure 8 TAM Tab**

The **TAM** tab includes the following widgets: Display/Edit Configuration and Edit Analysis Report Graph Properties.

- **Display/Edit Configuration** - Widget type: button. This button displays the TAM configuration data for editing.
- **Edit Analysis Report Graph Properties** - Widget type: button. This button displays a dialog to edit the TAM analysis report graph properties. The properties apply to all users of the system.

### 3.2.4 Status Bar

The IHSDM System Administration Tool Frame includes the statusbar fields listed below.

**Progress Bar** - This progress bar displays the progress of the current processing.

**Progress Bar Text** - This text field bar displays the current processing status message.

# 4. Other Topics

## 4.1 Editing Report Graph Properties

The Administration Tool provides access to the dialog boxes that allow the graph properties (line width, color, style etc.) for the analysis report graphs contained in the PRM, DCM, CPM and DVM to be edited. For more information, see Graph Properties.

## 4.2 Upgrading Client Installations

IHSDM can be configured in either a **stand-alone** or **client-server** operational environment using the **configuration** tool (See the Installation Manual for more information). When IHSDM is configured in the **client-server** operational environment, the IHSDM administrator can control the software components on client machine installations from the server installation. This capability allows an organization to install IHSDM on a number of machines and have the performance advantages of the **stand-alone** environment while enjoying the maintenance advantages of the **client-server** operational environment.

The IHSDM system administrator can control the extent of the IHSDM installation that is copied to the client machines. The administrator can evaluate the trade-off between client machine disk requirements and performance and tailor the IHSDM for the organization. For, example, most organizations will probably find adequate performance using an installation that specifies the Java runtime environment and the IHSDM Java archive to reside on the client while the documentation resides on the server.

When any IHSDM invocation executable image (e.g., **ihsdm.exe**, **prm.exe** etc.) is started on the client machine, it compares the upgrade date file on the local machine with the upgrade date file on the server (`lib/upgrade.date`). If the date files are different, the invocation executable copies the upgrade executable (**upgrade.exe**) from the server and launches the upgrade executable. The upgrade executable processes a list of files (**lib/upgrade.list**) from the server. The list can specify that files on the client machine be *removed*, *updated* (copied from the server to the client), or *replaced* (i.e., updated only if they already exist on the client)

### 4.2.1 Graphical User Interface

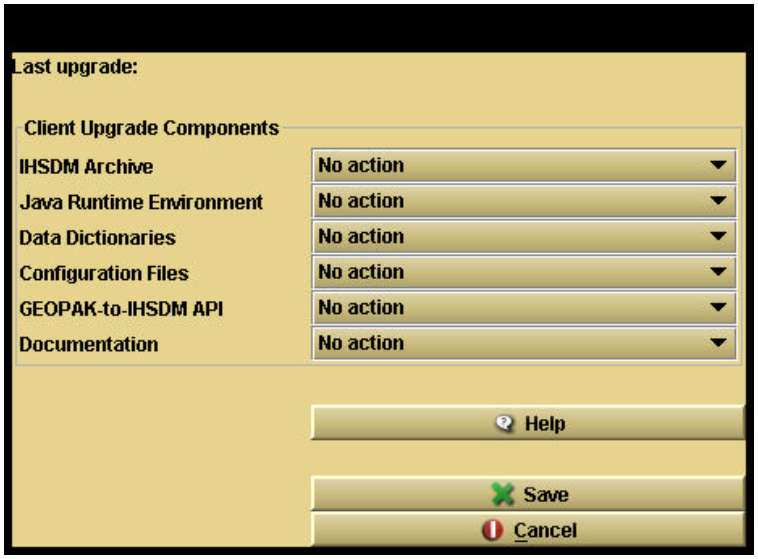


**Figure 9 Client Upgrade Components Dialog**

This dialog provides the ability to specify components to be upgraded on a client machine. The **`Client Upgrade Components`** dialog includes the following widgets: IHSDM Archive, Java Runtime Environment, Data Dictionaries, Configuration Files, GEOPAK-to-IHSDM API, Documentation, Help, Save and Cancel.

#### 4.2.1.1 Widgets

- **IHSDM Archive** - Widget type: combo box. This item specifies the action for the IHSDM Java archive (**lib/IHSDM.jar**). The file contains the Java class files for the entire IHSDM system. The enumeration values are: **`No action`**, **`Remove`**, **`Replace`** and **`Update`**.
- **Java Runtime Environment** - Widget type: combo box. This item specifies the action for the Java runtime environment. The component includes most of the file in the **bin/** and **lib/** subdirectories. The enumeration values are: **`No action`**, **`Remove`**, **`Replace`** and **`Update`**.
- **Data Dictionaries** - Widget type: combo box. This item specifies the action for the data dictionary component. The component includes the **datadict/*.dict** files and the file **system.blob**. The enumeration values are: **`No action`**, **`Remove`**, **`Replace`** and **`Update`**.
- **Configuration Files** - Widget type: combo box. This item specifies the action for the configuration files component. The component includes the **config/*.xml**, **policy/*.obj** and ***.xml** files. The enumeration values are: **`No action`**, **`Remove`**, **`Replace`** and **`Update`**.
- **GEOPAK-to-IHSDM API** - Widget type: combo box. This item specifies the action for the GEOPAK-to-IHSDM API component. The component includes the files in the **geopak_to_ihsdm_api** directory. The enumeration values are: **`No action`**, **`Remove`**, **`Replace`** and **`Update`**.
- **Documentation** - Widget type: combo box. This item specifies the action for the documentation component. The component includes the contents of the **html/** directory. The enumeration values are: **`No action`**, **`Remove`**, **`Replace`** and **`Update`**.

- **Help** - Widget type: button. This button displays help about upgrading client installations in an HTML browser.
- **Save** - Widget type: button. This button processes the specified client components and closes the dialog.
- **Cancel** - Widget type: button. This button exits the client component upgrade dialog without processing the specified client components.

# 5. IHSDM Documentation

IHSDM documentation is organized in a series of manuals oriented to specific user types and information needs. User types include first-time users, regular users, and system administrators. Information needs include: installing and configuring IHSDM, the mechanics of using the various features of the software, engineering insights to ensure appropriate use of the software and interpretation of outputs, and administering and maintaining the software installation.

The structure of the series of manuals is illustrated in the User Documentation Map. The manuals are listed and described below by the users and information needs they support:

- Manuals for First-Time Users: These manuals are oriented to assist new users in installing and configuring IHSDM and running it for the first time. Manuals include:
  - Getting Started Guide - An overview of the installation and use of IHSDM. This Guide should be sufficient for stand-alone installations. For client-server installations, the more detailed IHSDM Installation Manual will be needed.
  - Installation Manual - A detailed reference to the installation and configuration of IHSDM.
  - Running IHSDM Software Manual - An overview of the basic operations in running the IHSDM software. The intent is to provide new users the information they need to run IHSDM for the first time.
- User's Manuals: These Manuals are intended as references that regular users can consult when issues arise about the mechanics of using the IHSDM graphical user interface. Manuals include:
  - IHSDM User's Manual - A reference for using the primary IHSDM graphical user interface. Other User's Manuals provide additional details on specific components of the IHSDM graphical user interface:
    - Policy Review Module (PRM) User's Manual - A reference for using the (stand-alone) Policy Review Module software graphical user interface.
    - Crash Prediction Module (CPM) User's Manual - A reference for using the (stand-alone) Crash Prediction Module software graphical user interface.
    - Design Consistency Module (DCM) User's Manual - A reference for using the (stand-alone) Design Consistency Module software graphical user interface.
    - Intersection Review Module (IRM) User's Manual - A reference for using the (stand-alone) Intersection Review Module software graphical user interface.
    - Traffic Analysis Module (TAM) User's Manual - A reference for using the (stand-alone) Traffic Analysis Module software graphical user interface.
    - Using the IHSDM Graphical User Interface - A reference for the operation of the individual components of the graphical user interface.

    - User Properties and Defaults Manual - A reference for editing IHSDM system properties, user properties, and user default values.
  - Frequently Asked Questions - A list of frequently asked questions related to the IHSDM software.
  - IHSDM Troubleshooting Guide - A reference for troubleshooting IHSDM software problems.
- Documentation of IHSDM Data: These documents provide detailed descriptions of all IHSDM data elements and references for importing and editing data.
  - IHSDM Highway Model - A reference for the IHSDM highway model, including descriptions of the data elements comprising the model.
  - LandXML Support - A reference for IHSDM support for the LandXML data standard.
  - Editing Highway Elements - A reference for using the Edit/View Highway Elements graphical user interface.
  - GEOPAK-TO-IHSDM Application Programmer's Interface (API) User's Manual - A reference for using the Application Program Interface (API) to export data from GEOPAK into a format that IHSDM can import.
- Engineer's Manual: The intent of these Manuals is to provide the engineering information necessary to make appropriate use of IHSDM evaluation capabilities and interpretation of results. Manuals include:
  - Policy Review Module (PRM) Engineer's Manual - A reference for the engineering issues of using the Policy Review Module.
  - Crash Prediction Module (CPM) Engineer's Manual - A reference for the engineering issues of using the Crash Prediction Module.
  - Design Consistency Module (DCM) Engineer's Manual - A reference for the engineering issues of using the Design Consistency Module.
  - Intersection Review Module (IRM) Engineer's Manual - A reference for the engineering issues of using the Intersection Review Module.
    - **Intersection Policy Review Sub-Manual** - Describes the procedures for checking an intersection design element against relevant policy, including references to the section of the AASHTO policy that contains the information used to develop the module and check the design. **(The Intersection Policy Review Sub-Manual is not available in the current release of IHSDM.)**
    - Intersection Diagnostic Review Engineer's Sub-manual - Describes in detail the concerns that the diagnostic review component considers and the models used to evaluate those concerns.
  - Traffic Analysis Module (TAM) Engineer's Manual - A reference for the engineering issues of using the Traffic Analysis Module.
- Manuals for System Administrators: These Manuals provide system administrators the information they need to maintain IHSDM installations.
  - System Administrator's Manual - A reference for using the IHSDM Administration Tool software graphical user interface. This manual also discusses customizing variable components of IHSDM, including analysis report templates, data dictionaries,

and policy files.

- PRM/IRM Policy Table Maintenance - A reference for editing design policy tables used in the Policy Review Module and Intersection Review Module.

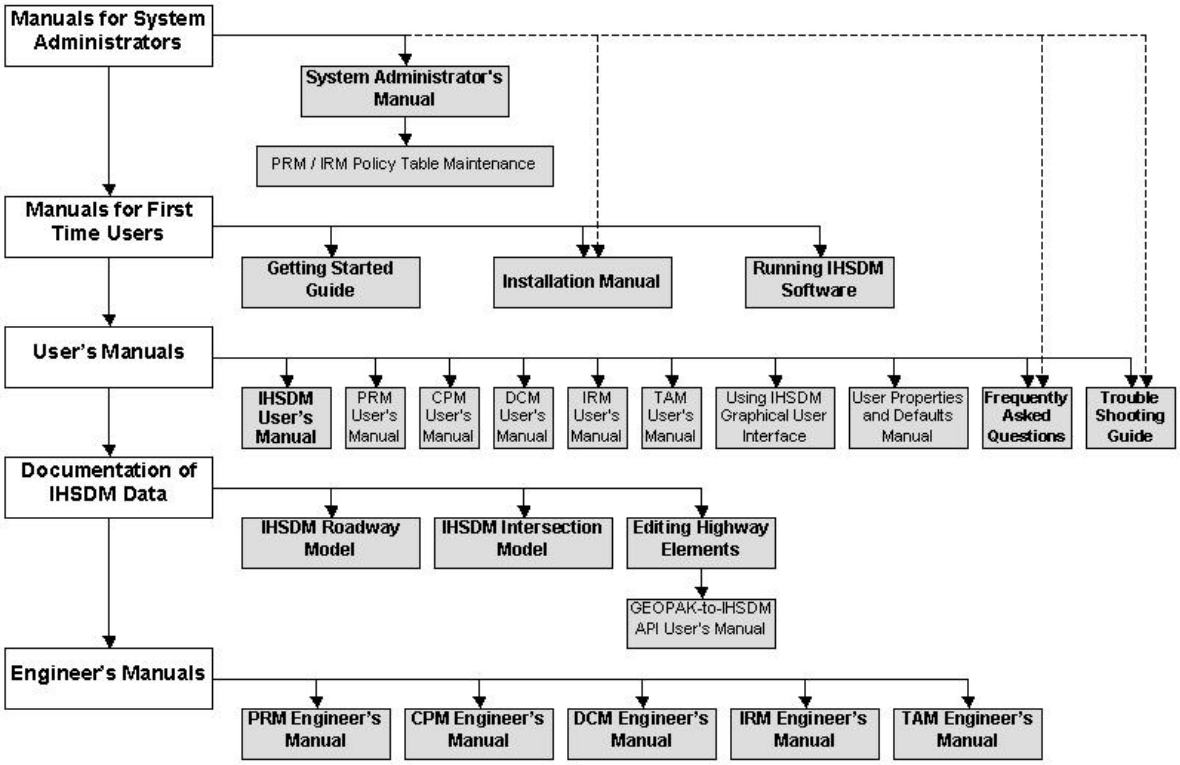


**Figure 10 User Documentation Map**

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